

# Herring Move Up the Ladder

By JON MCGRATH

The Island Creek river herring restoration project is nearing completion after two years of planning, permitting, fundraising, numerous engineering challenges, and nearly a year of construction that

included hundreds of hours of volunteer labor. About the only thing missing are the fish – but this could change soon, as signs of the annual spring migration are evident in the area.

The goal behind all this effort is to enable herring to pass from Duxbury Bay into and through Mill Pond beneath Tremont Street and ultimately up into Island Creek Pond. Reports about herring in some of the earliest

town records indicate the waterway was once teeming with herring, both in the spring as they migrated to the ponds to spawn and in the fall as the young migrated from stream to sea for the first time.

Beginning in the early 1800s, dams were erected across Island Creek at various locations to provide power to industrial mills. It's not clear whether fish passage was always considered, but a ladder was ultimately built at Tremont Street in the early 1900s to allow access for herring beyond the dams.

While that ladder functioned for decades, it is unlikely that many fish were always able to navigate through it, due to both deterioration and design limitations. During periods of low flow, the water height over the steps was probably too shallow for herring to navigate. Unlike some other anadromous fish, like salmon, herring cannot jump, so must swim through a solid path of water. The new ladder doesn't increase flow, but channels available water through a narrower and higher slot.

The project was conceived by the Duxbury Bay Management Commission and involved replacing the deteriorated fish ladder located below Mill Pond off Tremont Street, and modifying a small dam erected below Island Creek Pond. Design of the new ladder was coordinated with the help of numerous regional experts, notably Phillips Brady, project leader for anadromous species at the Mass Division of Marine Fisheries; and Ken Reback, widely recognized herring expert who recently retired from the same post.

Construction at the site started behind schedule last spring because of the abnormally rainy weather, but the contractor, Charter Environmental of Wilmington, completed the project before the tight deadline, required to minimize impact on smelt and American eels, which still inhabit the stream. The project was also completed within the task force budget.

It may seem like a distant memory, but for several days last summer Route 3A was clogged as workers readied the site and lowered sections of the new ladder into place. It was fortuitous that the ladder was built in pieces; once the sections were positioned, it became evident the foundation was graded at too shallow an angle. The ladder had to be disassembled and reassembled again after the foundation grade was corrected. Had the ladder been poured in place, as originally planned, it might have been disastrous. Once the concrete sections were positioned, the ladder steps were created with vertically stacked boards the upper-most board specially slotted to improve water flow.

After the Tremont Street ladder was completed, work began upstream. A small dam had been erected at Elm Street in 1935 to increase the water volume in Island Creek Pond. Rather than remove it, the height was lowered and another small dam was erected above it, resulting in two smaller steps that will now enable fish passage.

With the major construction nearing completion, work began to remedy issues with the remaining streambed. The chief issue concerned the remnants of a dam about midway between Tremont Street and Elm Street. Although the dam was long ago disassembled, remaining boulders were a barrier. The site was too isolated and overgrown to enable equipment movement, so several large stones were manually realigned, forming channels that will enable fish passage. Early last summer a group of volunteers, including local Boy Scouts, went on a survey and cleaning mission to clear out obstructing timber.

The task force is now moving into the final phase of the project, to establish a management plan to monitor and manage the condition of the system.

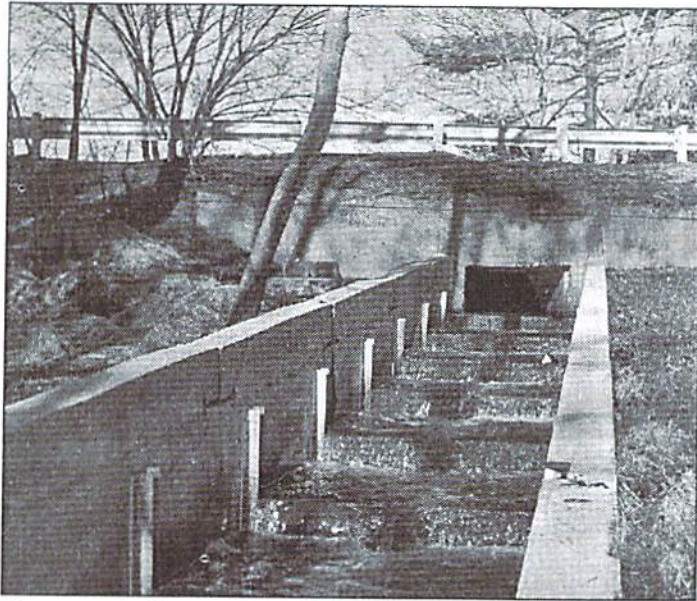
*John McGrath was the task force chairman for the fish ladder project.*

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The new ladder channels water through a narrower and higher slot, which is easier for fish to navigate.



The new ladder was produced offsite in pieces and then assembled onsite.



At times of low flow, water over the steps of the old ladder was probably too shallow for herring to push through.